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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/600,060	07/10/00	WILLIAMS	N CTH-03

EXAMINER	
HUYNH, P	
ART UNIT	PAPER NUMBER
1644	7

HM12/0321

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DATE MAILED: 03/21/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/600,060	Applicant(s) WILLIAMS ET AL.	
	Examiner " Neon" Phuong Huynh	Art Unit 1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *Three* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 January 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-39* is/are pending in the application.

4a) Of the above claim(s) *31-39* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

DETAILED ACTION

1. Applicant's election with traverse of Group I, Claims 20-30, in Paper No. 6, is acknowledged.

The traversal is on the grounds that Groups I, drawn to a method of identifying agent and Group II, drawn to a pharmaceutical composition identified by Group I, should be examined together because the search for each group would provide information concerning another group, thus the examination of the groups together would pose no undue burden on the Examiner.

These arguments are not found persuasive for the following reasons. While the searches of the related inventions may overlap, the fields of search are different and not coextensive. One method of establishing undue burden is a demonstration that the searches are not coextensive; thus, the searches of Groups I and II are found to pose an undue burden on the Examiner because they are not coextensive. This is not found persuasive because of the reasons set forth in paper No. 5, mailed 12/5/00.

Applicant's arguments on page 2, concerning that claims have "a community of properties" and the cost of undue burden for applicants with small entity status are noted but not found persuasive. The requirement is still deemed proper and is therefore made FINAL.

Claims 20-39 are pending.

Claims 20-30 are being acted upon in this Office Action.

Claims 31-39 are withdrawn from further consideration by the examiner, 37 C.F.R. 1.142(b) as being drawn to a non-elected inventions.

2. Applicant should amend the first line of the specification to update the status and relationship of the priority documents. The first sentence of the specification should refer to the foreign applications using language such as: For example, This Application is a 371 of PCT/GB99/00070 filed on 7/10/2000 and GB9800487.2, filed on 1/9/1998.

3. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

4. Claim 23 is objected because of misspelling the word "signalling". Appropriate correction is required.

5. The instant claims 20-30 may not have the benefit under 35 U.S.C. § 119(a)-(d) of foreign application 9800487.2 filing dates, which is Jan 9, 1998. The subject matter in Claims 20-30 has no support in the foreign application as filed. If applicants disagree, applicants should present a detailed analysis as to why the claimed subject matter has clear support in the foreign application.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 20-30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

There is insufficient written description about "mutants or derivatives thereof" that either bind or fail to bind to GM1. Neither is there sufficient working examples to show that Applicant was in possession of "mutants or derivatives thereof". The specification discloses on page 17 line 5-6 that the term "GM1 binding agent" includes **any agent** which acts as an immunomodulator through interacting with a GM1 ganglioside receptor". The instant claims are broad and encompass a virtually unlimited number of GM1 binding agent, including those naturally occurring mutants and gangliosides that bind GM1 and naturally occurring mutants that do not bind GM1.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 20-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 20-30 are rejected under 35 U.S.C. 112, second paragraph, because the recitation of "modulates". The term "modulates" is ambiguous as to the direction (positive or negative), (stimulatory or inhibitory) or degree of modulation.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, because the recitation of "ganglioside associated activity" since the term is ill defined in the specification. The term "associated activity" is unclear. Could it be the binding activity, the ADP-ribosylating activity or the cytokine activity?

Claim 20-22 are rejected under 35 U.S.C. 112, second paragraph, because the recitation of "mutants or derivatives thereof" since the metes and bound of the structure and/or functional equivalent of the mutants or derivatives are ambiguous and ill defined.

Applicant is reminded that the amendment must point to a basis in the specification so as not to add any new matter. See MPEP 714.02 and 2163.06.

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103(a) that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. This application currently names joint inventors. In considering Patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 20-30 are rejected under 35 U.S.C. 103(a) as being unpatentable Nashar *et al.* (Proc. Natl. Acad. Sci USA 93: 226-230, PTO 1449; see entire document), in view Yamamoto *et al.* (J. Exp. Med. 185(7): 1203-1210, 1997, PTO 892; see entire document) and Kim et al (J Immunology 160: 1198-1203, 1998, PTO 892; See entire document).

Nashar *et al.* teaches Enzyme-Linked Immunosorbent Assays (ELISAs) to assay for agents that are not coupled to an antigen that bind to GM1 including Etx, EtxB and mutants or derivatives thereof that fail to bind to GM1 and modulates ganglioside associated activity as

encompassed by claim 20-23 (See page 227, left column, ELISAs, and right column second paragraph in particular). The GM1 associated activity includes a change in antigen specific T-cell reactivity including IgG, IgA levels or a mixture thereof as encompassed by claims 20, 26 (See 227 right column last paragraph). The agents reduce the production of Th2 associated cytokine including IL4, IL10 encompassed by claims 27-30 (See page 229, Right column, Production of Cytokine, in particular).

Nashar *et al.* differs from the claimed invention by not assay for IgE or TGFβ.

Yamamoto *et al.* teaches mutant or derivatives of cholera toxin (Ctx and CTxB) as agent that bind GM1, has GM1 mediated intracellular signaling events and modulate associated activity i.e., IgE (See Table 2) and Th2 cytokine production including IL-4, IL-5, IL-6 and IL-10 encompassed by claims 22-25, 27 (See page 1204, Materials and Methods, Fig 1, page 1027 right column).

Kim *et al.* teaches agents encompasses cholera toxin and cholera toxin B wherein the agent is capable of enhance induce the production of IgA through TGFβ of instant claims 26 and 30 (See Table I, page 1203 second paragraph, Table IV, and Fig 4).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to screen for Th2 associated cytokine including IL-4, IL-10 and TGFβ since Th2 cytokine suppress Th1 immune response. Further, TGFβ appear, in part, to be responsible for IgA production, IgA class switches, and induce antigen specific tolerance (immune suppression) as taught by the references. One having ordinary skill in the art at the time the invention was made would have been motivated with a reasonable expectation of success to combine the teaching of the prior art to identify additional agents since members of the cholera toxin or E coli heat labile toxin family are ideal candidates for suppressing antigen-specific IgE production which is relevant to IgE mediated hypersensitivity as taught by Yamamoto.

13. No claim is allowed.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to "Neon" Phuong Huynh whose telephone number is (703) 308-4844. The examiner can normally be reached Monday through Friday from 9:00 am to 6:00 p.m. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

15. Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-7401.

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March 21, 2001

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